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Teachers' Perceptions of Their Work with Teacher Assistants: A Systematic Literature Review

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Abstract: With the number of teacher assistants (TAs) employed in schools steadily increasing, most teachers are likely to work with a TA at various times throughout their career. International research indicates there is scope for teachers to enhance their work with TAs. This systematic review examines teachers' perceptions of their work with TAs. Twenty-six studies were reviewed to gain insight into teachers' thoughts, beliefs and/or impressions of their work with TAs. Ten perceptions of teachers relating to the manner in which they work with TAs were identified and further categorised into four key themes of roles and responsibilities, planning and pedagogy, leadership, and interpersonal relationships. Implications from the review highlight a need for schools and universities to reconsider teacher preparation and ongoing training with respect to teachers' work with TAs.

Introduction

This paper systematically reviews international research examining teachers' perceptions of their work with teacher assistants¹ (TAs) in mainstream education settings (as opposed to special schools). With an international impetus towards more inclusive models of support for students with disability (Forlin, 2010), schools are increasingly employing TAs to meet the diverse needs of students (Butt, 2017; Giangreco et al., 2011).

The role of TAs has changed significantly over time, and they are no longer limited to being an 'extra pair of hands' (Wilson et al., 2003) to assist with non-instructional activities (Howard & Ford, 2007). The position has evolved to become more specialised where TAs are often considered to be the 'solution to inclusion' (Rutherford, 2012, p. 760). Much of the research since the late 1990s has focused on the work of TAs in relation to students with a disability in mainstream classrooms (Sharma & Salend, 2016; Giangreco et al., 2010) along with studies investigating the professional roles, efficacy, training, and experiences of TAs (Brock & Carter, 2013; Farrell et al., 2010).

The effective use of TAs is considered a key factor in promoting inclusive practices (Ainscow, 2000). A growing body of research acknowledges the advantages of having TAs working with students if deployed effectively. Butt (2016b) proposes a shift in the focus of the work of TAs, from providing support exclusively to students with a disability to that of a facilitator of learning for students requiring minimal support so that teachers are available to support those most in need. Webster and de Boer (2021) examine research into the delivery

¹ The term Teacher Assistant (TA) is used synonymously with teaching assistant, paraprofessional, paraeducator, teacher aide, education assistant and learning support assistant.

of high-quality, evidence-based, structured interventions to individual students and small groups by TAs. They report that several trials show promising results, with moderate positive benefits observed. Indirect benefits include more positive learning experiences for all students and the reduction of teacher stress and workload (Blatchford et al., 2012; Giangreco et al., 2011).

When utilised ineffectively, however, TAs are a high-cost resource that has a low impact on student learning (Evidence for Learning, 2021; Higgins et al., 2012). In particular, students with additional learning support needs perform worse in classes where a TA is present, relative to their peers (Blatchford et al., 2012). Over two decades of research by Giangreco and colleagues (e.g., Giangreco et al., 2001) has established that an overreliance on one-to-one TA support leads to a wide range of inadvertent and detrimental effects on student learning. Longitudinal studies have found that although students may demonstrate improvements in confidence and on-task behaviour, there is no evidence indicating the presence of TAs in classrooms has a positive effect on learning outcomes (Blatchford et al., 2007; Giangreco, 2010; Suter & Giangreco, 2009). Rather, ineffective support provided by TAs has been reported to be a barrier to inclusion, with students receiving the most support from TAs making less academic progress than similar students receiving less support (Blatchford et al., 2011). Furthermore, excessive TA proximity can lead to students feeling isolated and stigmatised (O'Rourke & West, 2015; Whitburn, 2013). TAs are often expected to work with students with the most complex learning profiles, executing adjustments they are not qualified to provide (Groom, 2006; Howard & Ford 2007; Webster et al., 2010). Furthermore, TAs often receive minimal induction into their role, lack clear role descriptions, receive limited feedback, are rarely given the opportunity to contribute to program planning for students they support, and have inadequate training and supervision in the provision of instruction or interventions (Howard & Ford, 2007; Sharma & Salend, 2016). Many of these factors are beyond the control of TAs yet impact on their ability to fulfil their responsibilities and ultimately may negatively impact on student learning outcomes.

The work of TAs and their impact on student outcomes has been well researched, as have the impediments to their effective deployment. Research focusing on teachers' perspectives regarding the way in which they work with TAs is still emerging in this field. Small scale Australian studies (Opie et al., 2017; Butt, 2016a; Butt, 2016b; Butt & Lowe, 2012; Gibson et al., 2016; Harris & Aprile, 2015; O'Rourke & West, 2015; Whitburn, 2013; Wilson & Bedford, 2008) have focused predominantly on the work of TAs, and less so on how teachers perceive their work with TAs.

As the number of TAs in mainstream schools increases internationally (Butt, 2017), an evolving aspect of teachers' roles should address their work with TAs. This has been given limited attention in teacher education programs, resulting in teachers feeling poorly prepared to lead TAs (Biggs et al., 2019). As supporting students with diverse learning needs in an inclusive environment requires a collaborative approach, with TAs serving as key team members (Douglas et al., 2015), teachers are likely to benefit from understanding how they can enhance their work with TAs to support learning for all students.

Objectives

This paper reviews, synthesises, and summarises international peer-reviewed research from 2000 to 2018 focusing on the work of teachers with TAs when supporting the inclusion of students with disability. Synthesis involved the aggregation, integration, and interpretation of key ideas (Gough, 2007) considered in relation to the following research questions:

1. How do teachers perceive their work with TAs?

2. What are the implications of teachers' perceptions of their work with TAs on classroom practice and teacher training?

Teachers' perceptions are considered to be their thoughts, beliefs, and/or impressions about their work with TAs. Key findings summarised in this paper are influenced by cultural and local contexts therefore caution should be exercised when interpreting and applying them. Whilst not attempting to validate the data reported in previous studies nor establish a 'one size fits all' solution to how teachers can make the best use of TAs, the findings can be considered in light of individual school contexts, and the particular needs of schools and students.

Method

Search and Selection Procedures

This review was performed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses methodology (PRISMA) that is commonly employed in health and social sciences research (Moher et al., 2009; Petticrew, 2001). In order to identify papers addressing teachers' perceptions of their work with TAs, criteria for inclusion of studies were determined. Studies were included if they: (a) were published in peer reviewed journals; (b) were from English language journals; (c) were published between January 2000 and March 2018; (d) contained primary empirical data; (e) related to mainstream school settings; and (f) included the perceptions of mainstream teachers or teachers with leadership roles in inclusion (hereafter referred to as Inclusion Leaders [ILs]) in relation to their work with TAs. January 2000 was selected as the start date since Giangreco et al. (2001) completed a significant review of literature pertaining to the work of TAs spanning from 1991 to early 2000. Since then, there has not been a published peer reviewed literature review examining the work of teachers with TAs with a focus on how teachers perceive the way in which they collaborate to support students.

Studies were systematically identified through a rigorous search and selection methodology as outlined in Figure 1. Searches of scholarly electronic databases were carried out to identify suitable papers and included: ERIC, PsychInfo, Scopus and Google Scholar using the following key search terms: *teacher assistant, teaching assistant, paraprofessional, paraeducator, teacher aide, education assistant, learning support assistant, teacher, perceptions, inclusion, and inclusive education.*

Reading the titles and abstracts of identified papers led to the exclusion of papers either because they related to early childhood education, special school settings, did not specifically address perceptions of teachers regarding their work with TAs, or lacked reference to empirical data of teacher and/or TA practice. Other papers were excluded if they did not relate specifically to the inclusion of students with disability or if the research did not document teacher perspectives of working with TAs. The full text of the remaining studies warranting further investigation was then screened for the final review and a database listing teachers' perspectives relating to their work with TAs was developed from the findings of the papers.

Based on the inclusion criteria, 105 papers were identified as eligible to undergo a comprehensive review. Upon completion of this process, sixteen papers met the inclusion criteria and were deemed suitable. To ensure literature saturation, the reference lists from these papers were scanned and an additional 12 papers were identified. The resulting 28 papers were saved into an EndNote database then collated in Microsoft Excel with the following information noted: author(s), journal name, year of publication, study location, research methodology, and key findings. The co-authors independently reviewed the list of

included papers against the inclusion criteria and any disagreements about the suitability of studies were resolved through re-examination and discussion, resulting in two papers being excluded. After this process 26 papers satisfied the inclusion criteria for the review. Bazeley's (2013) recommendations for qualitative data analysis were used to guide the exploration of patterns and themes in the literature. Codes were used to link associated ideas. Data were analysed using an iterative process using both *a priori* and inductive coding to identify recurring themes. The co-authors discussed coding, clarified labels applied to the identified themes, and the consistency of their application to the data. Differing interpretations were discussed until agreement was reached according to the requirements for validity and rigour in qualitative research (Bazeley, 2013).

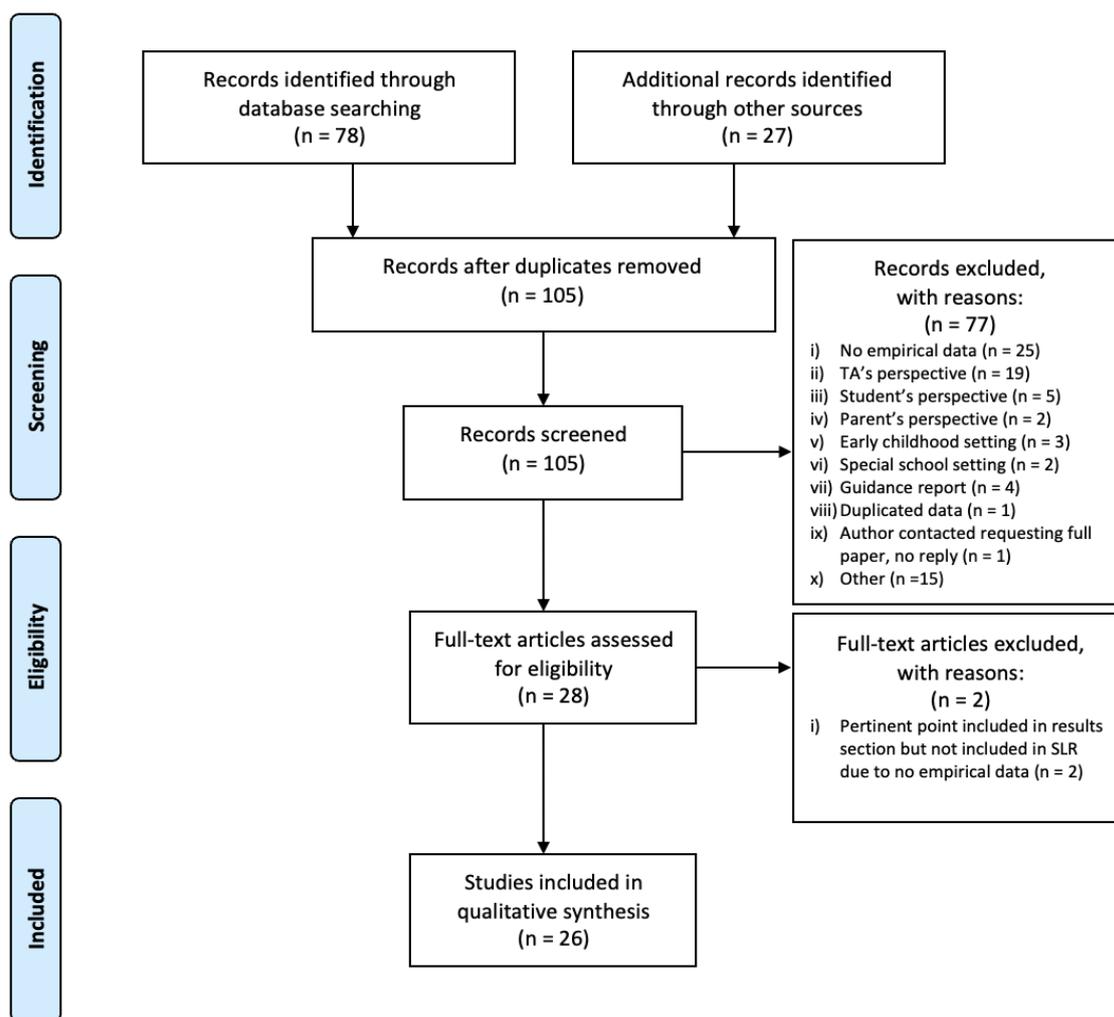


Figure 1: PRISMA Flow Diagram Demonstrating Identification and Screening Stages

Results

Overview of Papers

Table 1 outlines the papers included in this study. The 26 studies were conducted in four countries: United States ($n = 13/50\%$), United Kingdom ($n = 7/26.9\%$), Australia ($n = 5/19.2\%$), and Cyprus ($n = 1/3.8\%$). Nearly 70% (18) of the included papers have been published since 2008 suggesting this is a topic in inclusive education that is gaining increased

attention internationally.

Of the 26 studies that met inclusion criteria, 14 (53.8%) employed qualitative designs, seven (26.9%) included quantitative designs, and five (19.2%) included both qualitative and quantitative components in the research design. Qualitative methods included questionnaires, semi-structured interviews, focus groups, observations, intervention studies, conversation analysis, and case studies. Quantitative approaches employed were mostly surveys, questionnaires, screening tools, observations, and research employing multiple-baseline designs.

No.	Year	Author(s)	Title	Location
1	2009	Angelides, Constantinou & Leigh	The role of paraprofessionals in developing inclusive education in Cyprus.	Cyprus
2	2011	Berry, Petrin, Gravelle & Farmer	Issues in special education teacher recruitment, retention, and professional development: Considerations in supporting rural teachers.	USA
3	2016	Biggs, Gilson & Carter	Accomplishing more together: Influences to the quality of professional relationships between special educators and paraprofessionals.	USA
4	2019	Biggs, Gilson & Carter	“Developing that balance”: Preparing and supporting special education teachers to work with paraprofessionals.	USA
5	2017	Britton, Collins, Ault & Bausch	Using a constant time delay procedure to teach support personnel to use a simultaneous prompting procedure.	USA
6	2016	Brock & Carter	Efficacy of teachers training paraprofessionals to implement peer support arrangements.	UK
7	2016a	Butt	Employment procedures and practices challenge teacher assistants in mainstream schools.	Australia
8	2016b	Butt	Teacher assistant support and deployment in mainstream schools.	Australia
9	2012	Butt & Lowe	Teaching assistants and class teachers: Differing perceptions, role confusion and the benefits of skills-based training.	Australia
10	2014	Cameron	An examination of teacher-student interactions in inclusive classrooms: teacher interviews and classroom observations.	USA
11	2005	Cremin, Thomas & Vincett	Working with teaching assistants: Three models evaluated.	UK
12	2010	Devecchi & Rouse	An exploration of the features of effective collaboration between teachers and teaching assistants in secondary schools.	UK
13	2015	Douglas, Chapin, & Nolan	Special education teachers' experiences supporting and supervising paraeducators: Implications for special and general education settings.	USA
14	2000	Drecktrah	Preservice teachers' preparation to work with paraeducators.	USA
15	2007	Giangreco & Broer	School-based screening to determine overreliance on paraprofessionals.	USA
16	2011	Giangreco, Broer & Suter	Guidelines for selecting alternatives to overreliance on paraprofessionals: Field-testing in inclusion-oriented schools.	USA
17	2001	Giangreco, Edelman & Broer	Respect, appreciation, and acknowledgment of paraprofessionals who support students with disabilities.	USA
18	2003	Giangreco, Edelman & Broer	Schoolwide planning to improve paraeducator support.	USA
19	2016	Gibson, Paatsch & Toe	An analysis of the role of teachers' aides in a state secondary school: Perceptions of teaching staff and teachers' aides.	Australia
20	2005	Groom & Rose	Supporting the inclusion of pupils with social, emotional and behavioural difficulties in the primary school: The role of teaching assistants.	UK
21	2015	Harris & Aprile	‘I can sort of slot into many different roles’: Examining teacher aide roles and their implications for practice.	Australia
22	2009	Lewis & McKenzie	Knowledge and skills for teachers of students with visual impairments supervising the work of paraeducators.	USA
23	2001	Wallace, Shin, Bartholomay & Stahl	Knowledge and skills for teachers supervising the work of paraprofessionals.	USA
24	2013	Webster, Blatchford & Russell	Challenging and changing how schools use teaching assistants: Findings from the effective deployment of teaching assistants project.	UK
25	2010	Webster, Blatchford, Bassett, Brown, Martin & Russell	Double standards and first principles: Framing teaching assistant support for pupils with special educational needs.	UK
26	2008	Wilson & Bedford	New Partnerships for Learning!: Teachers and teaching assistants working together in schools - the way forward.	UK

Table 1: Papers Selected for Review Based on Inclusion Criteria

The literature revealed teachers' perceptions overlap and are interconnected, however, cluster into four broad themes relating to roles and responsibilities, planning and pedagogy, leadership, and interpersonal relationships. Table 2 summarises ten perceptions of teachers in relation to their work with TAs under these four themes. These perceptions are explored further under the four broad themes. Included papers are identified with an asterisk in the reference list.

Theme	Findings	Author(s)
1. Roles and responsibilities	1.1 TAs' roles and responsibilities need to be clearly defined to avoid confusion and misunderstandings.	Angelides, Constantinou & Leigh (2009); Butt & Lowe (2012); Douglas, Chapin & Nolan (2015); Giangreco, Edelman & Broer (2003); Gibson, Paatsch & Toe (2016); Wallace, Shin, Bartholomay & Stahl (2001); Webster, Blatchford & Russell (2013); Wilson & Bedford (2008).
	1.2 Clearly defined TA roles lead to more equitable access to teachers for all students.	Butt (2016b); Cameron (2014); Webster, Blatchford & Russell (2013).
2. Planning and pedagogy	2.1 When teachers plan how to use TAs in advance and communicate the plan with TAs, support for all students is improved.	Angelides, Constantinou & Leigh (2009); Berry, Petrin, Gravelle & Farmer (2011); Biggs, Gilson & Carter (2016); Biggs, Gilson & Carter (2019); Douglas, Chapin & Nolan (2015); Drecktrah (2000); Giangreco, Edelman & Broer (2003); Groom & Rose (2005); Lewis & McKenzie (2009); Wallace, Shin, Bartholomay & Stahl (2001); Wilson & Bedford (2008).
	2.2 The pedagogical responsibilities given to TAs should be commensurate with their level of training.	Angelides, Constantinou & Leigh (2009); Butt & Lowe (2012); Giangreco & Broer (2007); Giangreco, Broer & Suter (2011); Harris & Aprile (2015).
	2.3 Including TAs in planning, monitoring, and reviewing students' personalised goals can help to clarify the differing support roles both the teacher and TA provide.	Giangreco & Broer (2007); Giangreco, Edelman & Broer (2003); Groom & Rose (2005).
3. Leadership	3.1 Teachers would benefit from training in recruitment, supervision and leadership of TAs.	Angelides, Constantinou & Leigh (2009); Berry, Petrin, Gravelle & Farmer (2011); Biggs, Gilson & Carter (2016); Biggs, Gilson & Carter (2019); Douglas, Chapin & Nolan (2015); Drecktrah (2000); Giangreco, Edelman & Broer (2003); Groom & Rose (2005); Lewis & McKenzie (2009); Wallace, Shin, Bartholomay & Stahl (2001); Wilson & Bedford (2008).
	3.2 Teachers should receive training in how to facilitate specific targeted training for TAs in areas such as pedagogical skills, intervention programs, and literacy/numeracy support.	Britton, Collins, Ault & Bausch (2015); Brock & Carter (2016); Butt & Lowe (2012); Giangreco, Edelman & Broer (2003); Wallace, Shin, Bartholomay & Stahl (2001).
	3.3 Schools should establish an inclusive culture through appropriate policies and inclusive practices that factor in the work of TAs and how they can be supported in their role.	Biggs, Gilson & Carter (2016); Butt (2016a); Devecchi & Rouse (2010); Giangreco, Broer & Suter (2011); Giangreco, Edelman & Broer (2001); Groom & Rose (2005); Wilson & Bedford (2008).
4. Interpersonal relationships	4.1 Including TAs in the 'communication loop' leads to improved support for students.	Butt (2016a); Douglas, Chapin & Nolan (2015); Groom & Rose (2005); Wallace, Shin, Bartholomay & Stahl (2001); Wilson & Bedford (2008).
	4.2 TAs are likely to feel more valued and appreciated when their relationships with teachers are collaborative.	Biggs, Gilson & Carter (2016); Devecchi & Rouse (2010); Giangreco, Edelman & Broer (2001).

Table 2: Teachers' Perceptions of their Work with Teacher Assistants (TAs)

Teacher Perceptions
Roles and Responsibilities

Teachers perceive their work with TAs is more effective and leads to improved outcomes when there are clearly established roles and responsibilities for TAs.

TAs' Roles and Responsibilities need to be Clearly Defined to Avoid Confusion and Misunderstandings

Teachers expressed uncertainty regarding the distinction between their role and that of the TA, undermining teachers' confidence to collaborate effectively with TAs. Studies across all four countries highlight the need for schools to ensure there is consistent understanding amongst staff regarding the duties TAs should perform. For example, Webster et al., (2013) found a significant reduction in effective practice and inconsistencies in the way teachers deployed TAs when there was a lack of clarity and school-wide agreement in relation to role expectations for TAs. Some teachers were not clear what was expected of TAs and perceived their role was to support students with additional learning needs, which oftentimes led to teachers distancing themselves from those students.

Butt and Lowe (2012) identified the role of TAs was perceived differently by teachers and TAs, and in some instances, teachers were not certain what level of responsibility TAs should be given. Some teachers believed TAs were employed to provide direct support with the teaching and learning program, including undertaking the complex task of differentiating the curriculum for students with a disability. Other Australian research mirrored these findings, noting differences between official deployment and what TAs were actually expected to do led to TAs assuming responsibilities beyond their level of expertise (Gibson et al., 2016). Research from Cyprus found that some teachers perceived that TAs should have a pedagogical role, yet others felt TAs overstepped the mark and took on too much responsibility, such as when they liaised with parents regarding student attainment (Angelides et al., 2009). Teachers in the United States identified that their work with TAs could be improved if the roles and responsibilities of TAs were more widely publicised as this could lead to a reduction in confusion regarding expectations of the tasks TAs should perform (Wallace et al., 2001). Each of these studies indicate that establishing more clearly defined roles of TAs can contribute to improved teacher professional practice.

When TAs' roles are clearly defined, students have been shown to be the beneficiaries. For example, Douglas et al. (2015) found that the successful inclusion of students involves a collaborative approach with clearly defined but flexible roles and responsibilities. Teachers in the study by Wilson and Bedford (2008) emphasised the need for a distinction between the teacher and TA role to avoid TAs taking the sole charge for students with additional learning needs. In the United States, Giangreco et al. (2003) investigated the impact of a school review process where teachers developed a better understanding of the role of the TA through self-reflection in relation to their personal professional practice. This led to the perception that they were making better use of TA support. An additional benefit was that teachers contributed to more inclusive practices by creating more accessible curriculum for students with a disability who were therefore more successful in class. Each of these studies emphasise the need for teachers to take on a greater instructional role when teaching students with a disability so this responsibility is not left to the TA. The research highlights benefits of evaluating school structures and support models, aligning them more closely with what research indicates results in the best outcomes for all students.

Clearly Defined TA Roles Lead to more Equitable Access to Teachers for all Students

It is evident from the papers reviewed that many teachers are not certain as to the role TAs should play in assisting them with the inclusive teaching of all students. This is not surprising given academics specialising in inclusion are reluctant to define inclusive practice themselves (Graham, 2020). However, in 2016, the United Nations Convention of Rights for Persons with Disability (CRPD) Committee adopted General Comment No. 4 to Article 24: Right to an Inclusive Education (United Nations, 2016). This clarifies that in inclusive classrooms, all students should have an equitable learning experience, which would include equitable and fair access to the teacher. In a study by Webster et al. (2013), schools in the United Kingdom were involved in a project reflecting on their use of TAs. The research identified that having a TA present in lessons was associated with teachers' separation from, and potential abdication of responsibility for students with a disability. Involvement in the project prompted teachers to challenge their own practice and consider how the classroom could be organised more effectively to ensure students received equal allocation of teacher time. With improved understanding from teachers and TAs regarding the TA role, teachers reconsidered the way they worked and instead, deployed TAs to work with students without a disability while teachers spent more time working with low-attaining students and those with a disability. In examining teacher-student interactions, Cameron (2014) identified that teachers often transferred the responsibility of educating students with a disability to the TA, resulting in teachers having less contact with the students. This was due to teachers' perceptions that if they gave individual support to these students, the remaining students in the class would be disadvantaged. This study highlights the importance of teachers being aware of their responsibilities to all students to avoid these misconceptions regarding students with a disability. In Australia, similar findings have been identified by Butt (2016b), who found that when teachers had a clear understanding of the role of the TA, they spent more time working with students with a disability when a TA was present in the lesson, rather than abrogating their teaching responsibilities to the TA. However, perceptions of some teachers in the study were that if TAs were employed using targeted funding for students with disability, then it was appropriate for TAs to work with these students. These findings suggest teachers who are aware of the delineation between their roles and responsibilities and those of TAs may be more likely to implement more equitable and inclusive models of student support, providing students with the highest needs appropriate access to the teacher.

Planning and Pedagogy

A second theme to emerge from the literature is that pedagogy is improved through collaborative planning involving teachers and TAs. Three teacher perceptions are discussed below.

When Teachers Plan how to use TAs in Advance and Communicate the Plan with TAs, Support for all Students is Improved

Research from multiple countries highlights teachers' lack of awareness regarding the benefits of planning how to incorporate TAs into their lessons. However, in instances where advance collaborative planning occurred, support for students was more effective. A study in Cyprus found some teachers perceived that their colleagues often did not plan their lessons in a manner that allocated a role to the TA, resulting in teachers ignoring TAs and the students they accompanied (Angelides et al., 2009). On the other hand, teachers surveyed in schools in the United Kingdom recognised that to avoid students' overdependence on TA support, they planned their lessons so that TA support was made available to all students in the class (Groom & Rose, 2005). Two studies investigated cases where schools reflected on and

reconsidered their practices in relation to how teachers worked with TAs. In the first instance, due to a review of schools' practices, teachers reflected on whether the standard practice of employing a TA to directly support a student with a disability was an appropriate model of support. As a result, rather than assigning TAs to individual students, schools moved to a model where TAs were assigned to teachers (Giangreco et al., 2011). The second study (Webster et al., 2013) focused on schools that were involved in an intervention project to improve TA practices. Prior to participation in the project, TAs were frequently passive for half the lesson whilst listening to the teacher. Post-intervention, teachers recognised they could alter support available to students by carefully reconsidering how to work with TAs. As a result, the proportion of time TAs were unused in lessons reduced significantly. Teachers created more time to work with groups while TAs roved around the room. This change in practice led to teachers spending more time with students who had the most significant support needs. A further example from the United States highlighted the need for effective collaboration between teachers and TAs with regards to assigning TA duties. Wallace et al. (2001) identified key competencies needed by teachers when supervising TAs. Teachers in the study perceived that planning and scheduling for and with the TA was desirable, taking into consideration the strengths and interests of TAs when aligning tasks. Each of these studies demonstrate that effective pre-planning of intended approaches to student support leads to those students who require additional support having more direct contact with the teacher rather than the TA.

Research highlights not only the need for teachers to plan lessons around how they intend to use TAs, but also emphasises the importance of teachers sharing this information with TAs (Harris & Aprile, 2015). Teachers in a study by Biggs et al. (2016) perceived that effective organisational skills positively influenced their relationships with TAs. For example, a teacher in the study explained that when teachers organised lessons in advance and provided this information to TAs, the TAs were able to do their job successfully. Teachers made similar observations in a study by Gibson et al. (2016), noting that the provision of lesson plans was particularly helpful when TAs worked across a variety of classrooms and subject areas, although they questioned the capacity of TAs to interpret the aims of the lesson. In the United Kingdom, similar findings have been reported in two studies. In the first, teachers identified that they could support TAs through providing them with access to relevant knowledge and suggested this could be facilitated through the sharing of lesson plans in advance and briefing TAs before the lesson (Devecchi & Rouse, 2010). Webster et al. (2013) noted that TAs benefitted from teachers providing detailed lesson plans and additional material in advance of lessons as it made teachers' expectations more explicit and avoided TAs going into lessons unprepared. Teachers in the study felt that any additional time they invested in giving greater thought to the TA's role was offset by the advantages they noticed. However, teachers in the study perceived that the time needed for teacher-TA communication regarding planning and feedback presented challenges, particularly in secondary settings due to TAs' contracts restricting the time available to meet outside of scheduled class time. In some schools, TAs' work hours were modified to create liaison time; other schools relied on the goodwill of TAs to work beyond their contracted hours (Webster et al., 2013). Each study emphasises the benefits of teachers discussing planned approaches to supporting students prior to lessons so TAs can anticipate their role in advance.

Consistently, limited collaboration time has been identified as a barrier to effective teacher practice when planning how to maximise TA support (Webster et al., 2010). Teachers from a study in the United Kingdom identified their greatest need when working with TAs was to have liaison and planning time, noting that this could be facilitated by setting aside protected time (Wilson & Bedford, 2008). Research by Cremin et al. (2005) that explored models to guide the work of teachers with TAs reported similar findings. Planning a 'room

management system' whereby specific TA roles and activities were planned by the teacher led to increased numbers of students receiving support and therefore lower attaining students were not seen as the only recipients. Teachers perceived that, as a result of this restructure of support, all students were more responsive to support from TAs and demonstrated increased gratitude and respect towards TAs. However, the participants identified time as an important factor in determining whether the model would work under normal circumstances. Likewise, Giangreco et al. (2003) found that teachers perceived there were gains in inclusive opportunities for students with a disability when extra collaborative time was made available to teachers and TAs. These studies demonstrate that providing time for teachers and TAs to discuss and reflect on their differing roles leads to more effective support for all students.

The Pedagogical Responsibilities given to TAs should be Commensurate with their Level of Training

Teachers commonly express confusion regarding the degree to which TAs should assume a pedagogical role, particularly when instructing students with additional learning needs. This was evident in an Australian study, where teachers indicated they were unclear as to who TAs should support and what pedagogical responsibilities they should undertake. Some teachers perceived that the TA should support teaching and learning programs for all students whereas the TAs in the study felt their responsibility was to work with students with additional support needs (Butt & Lowe, 2012). Research frequently highlighted cases where teachers identified that students received instruction from TAs, who made curricular or instructional decisions without teacher oversight, and the TAs provided academic support in subjects in which they were under or unskilled. In the first of these studies, teachers felt that too much was expected of TAs in some cases, particularly if they were expected to take on pedagogical or behaviour management responsibilities (Angelides et al., 2009). In another study where schools trialled the use of a screening tool to determine their overreliance on TAs, teachers expressed concerns that TAs were providing primary instruction to students and being given the responsibility of making curricular decisions beyond their level of training – without teacher or IL oversight (Giangreco & Broer, 2007).

In a third study, teachers undertook a review process to reflect on their school's practices in relation to the use of TAs. As a result, they shifted away from a model whereby TAs provided primary instruction, directing them instead towards a provision they perceived to be more appropriate which was supplemental to the instruction of teachers and ILs (Giangreco et al., 2011). In an Australian study, schools considered how they could try to match TAs' perceived skills and interests to their roles. However, despite seeing this as a more effective use of TAs, teachers noted that creating the TA timetable presented challenges due to its complexity, and preferences could not always be fulfilled (Harris & Aprile, 2015). These studies emphasise the importance of teachers understanding the benefits of clearly delineating the difference between the role of the teacher and the TA so that all students have access to quality instruction from appropriately qualified and skilled individuals. It also highlights positive outcomes when TAs undergo specific training in structured interventions, which is discussed in more detail later in this paper.

Including TAs in Planning, Monitoring, and Reviewing Students' Personalised Goals can Help to Clarify the Differing Support Roles both the Teacher and TA Provide

Research identifies inconsistencies in teachers' involvement in personalised planning and support for students. Teachers often perceive that the IL has the responsibility of overseeing the development of a Personalised Learning Plan (PLP). In one study, school teams identified concerns that TAs and teachers were unfamiliar with goals for students with a disability and, as such, they were not aware of what was considered appropriate curriculum for the students (Giangreco & Broer, 2007). Two studies emphasised the importance of

including TAs in the personalised goal setting process for students with a disability. In the first instance, when PLPs were shared with TAs, teachers felt TAs had a better understanding of the support needs of students and were more familiar with students' learning goals (Giangreco et al., 2003). Likewise, in research from the United Kingdom (Groom & Rose, 2005), teachers felt it was important for TAs to have opportunities to be involved in planning and to discuss student progress. TAs were invited to student review meetings where their professional input was valued. Each of these studies highlights the benefits that come from involving teachers and TAs in determining relevant and challenging goals for students with a disability since they often work closely with the students and can offer insights into students' strengths and weaknesses that a teacher might not be aware of.

Leadership

A third major theme to emerge from the literature is that the work of teachers with TAs is facilitated through effective leadership structures in schools. Furthermore, it is desirable for teachers to have the ability and opportunity to lead and manage the work of TAs. Three perceptions of teachers that emerged from the literature are described below.

Teachers would Benefit from Training in Recruitment, Supervision, and Leadership of TAs

Research suggests effective leadership of TAs commences at the point they are recruited. This should begin from the first contact a TA has with their potential employer at the recruitment stage. Involving teachers in TA recruitment and selection processes has been found to contribute to the overall effective leadership of TAs, with some teachers considering it to be an essential responsibility if they worked with TAs (Groom & Rose, 2005). Other teachers noted a higher retention of TAs when there was improved orientation, on the job training, and supervision, with TAs reporting they felt respected and valued as a result (Giangreco et al., 2003). Teachers from the study who were involved in recruiting TAs were able to better identify specific TA qualifications and characteristics needed to support students. As a result, an increasing number of students with a disability were successfully included in the mainstream classroom (Giangreco et al., 2003). These studies demonstrate that high quality support and leadership from teachers is a key factor in supporting the work of TAs.

The reviewed studies reveal a variety of approaches to the leadership of TAs by teachers. In a study investigating essential competencies of teachers when working with TAs (Biggs et al., 2016), teachers emphasised the importance of TAs receiving ongoing support, direction, training, and feedback from highly qualified ILs. In a later paper the same researchers used the term "balanced leadership" to describe the leadership skills required by teachers who work with TAs, whereby leadership is conceptualised as multidimensional in nature rather than a single trait (Biggs et al., 2019). Teachers in the study emphasised the importance of teachers having appropriate leadership skills in order to foster collegial relationships with TAs. They identified ten competencies, falling into three key areas covering essential knowledge, skills and dispositions of teachers when leading TAs. Earlier research focusing on key competencies of teachers when leading TAs established that teachers believed support, direction, and feedback were required when supervising TAs, as was modelling a caring and respectful manner when interacting with students (Wallace et al., 2001). Lewis and McKenzie (2009) later developed a survey based on the competencies identified by Wallace et al. (2001), with teachers identifying that they played an important role in training TAs. Each of these studies highlight both the need for teachers to be competent leaders of TAs, but also that TAs benefit from feeling they are well led by

teachers.

A concern frequently raised internationally is that TAs benefit from quality leadership from teachers, yet research suggests pre-service and in-service teacher training does not address leadership of other adults as a core and essential skill. In research from Cyprus and England, teachers expressed concern that they were not trained in how to collaborate with TAs, which they identified as an obstacle to effective inclusive practice (Angelides et al., 2009; Wilson & Bedford, 2008). Similarly, in two studies from the United States, teachers identified they were required to supervise, manage, train, observe, evaluate, and provide feedback to TAs but received little preparation in this regard (Drecktrah, 2000; Douglas et al., 2015). In the first study, 90% of the more than 200 ILs surveyed felt this should be included in their training. In the second study, teachers emphasised the importance of receiving pre-service training to hone these leadership and managerial skills when working with TAs. Over 500 in-service teachers from the United States identified through a survey their most desired focus for ongoing training was how to work effectively with TAs (Berry et al., 2011). Furthermore, in a study by Groom and Rose (2005) line managers of TAs (typically teachers) identified additional training as a high priority for teachers fulfilling a leadership role in their work with TAs. It is clear from these studies that the leadership of TAs should feature prominently in both pre-service and in-service teacher training.

Teachers should receive Training in how to Facilitate Specific Targeted Training for TAs in areas such as Pedagogical Skills, Intervention Programs, and Literacy/Numeracy Support

In many instances, research has identified that teachers are required to provide specific training to TAs. Teachers highlighted on the job training of TAs as a core skill required by teachers (Wallace et al., 2001) and could include training to learn additional skills and strategies to support students. An advantage to teachers providing TA training in effective instruction was identified in a second study where, following a review of school practices, TAs were trained in instructional skills such as prompting, fading, and correction procedures. Teachers reported developing training materials for TAs had the added benefit of helping them to reflect on their own practice (Giangreco et al., 2003). Both studies show the need for teachers to provide further training to TAs in specific skills to improve the quality and efficacy of the support TAs provide to students.

Specific interventions are also noted in the research as an area in which TAs require training. In a study by Butt and Lowe (2012) both teachers and TAs identified a need for TAs to undertake on-the-job skills-based training in literacy, numeracy, and inclusive practices. Teachers specifically identified the type of training they felt TAs would benefit from, such as reading instruction. In another study (Brock & Carter, 2016), ILs trained TAs in a peer support intervention. The TAs were then able to run the program with fidelity, resulting in improved social interactions between students with severe disabilities and their peers. The teachers in the study perceived the training package to be an effective means by which to provide training to TAs. The authors noted, however, that teachers needed training in how to train TAs in specific programs and in general classroom support, highlighting the need for pre-service teacher training in this area. Britton et al. (2015) investigated the effectiveness of teachers using systematic instruction to teach TAs in how to use another form of systematic instruction when working with students with moderate intellectual disabilities. The TA carried out the intervention with high levels of fidelity and the student showed gains in his ability to perform the targeted skills. The teacher noted the benefits of the approach, however, emphasised that provision of the intervention could have been problematic had they not had additional staff available to work with other students at the same time. These three studies indicate there is scope for the work of TAs to be enhanced through access to further training by teachers in specific interventions.

Schools should Establish an Inclusive Culture through Appropriate Policies and Practices that Factor in the work of TAs and how they can be Supported in their Role

Leadership of TAs is influenced by factors at the macro, meso and micro level. At the individual (micro) level, teachers have the ability to adapt their own practices to improve their working relationships with TAs. However, at the whole-school (meso) and system (macro) level teachers are often removed from decision making processes and therefore factors impacting the teacher-TA relationship are oftentimes beyond their control. Responsive leadership from senior management was perceived by teachers to be significant in facilitating effective teacher-TA relationships according to Biggs et al. (2016). Teachers in the study indicated that it was desirable for school leaders to provide teachers and TAs with access to professional learning in relation to their work together. Teachers in a study by Groom and Rose (2005) had previously made the same observations: that staff with a responsibility of overseeing the work of TAs require appropriate managerial and leadership skills to manage the effective deployment of TAs and to support them in their professional learning. Similarly, teachers in a study by Wilson and Bedford (2008) identified that they perceived good practice as involving TAs in whole-school briefing and training sessions and team meetings, and in some cases, paying them for their attendance, which requires school leaders to reconsider school processes and policies to enable this. ILs in a study by Giangreco et al. (2001) noted that their caseload sizes and the number of TAs they were expected to supervise limited their ability to meet the needs of students. One way to navigate this barrier was highlighted in a study by Giangreco et al. (2011). They examined alternatives to an overreliance on TAs and found examples of schools where, as the result of a school review of internal structures and practices, ILs determined a more effective use of TAs was to train them in clerical tasks associated with funding, completing forms, typing documentation, and reports to free up teachers, allowing them more time to assume leadership responsibilities. This alternative use of TAs is an example of how the reconsideration of school processes may have a positive impact on inclusive practice. In each study it is evident that if TAs are to develop skills and strategies to facilitate their work with students, schools need to create school-wide (meso) processes that empower teachers as leaders and supporters of TAs.

The work conditions of TAs are frequently discussed in literature as being a barrier to inclusive practice. Teachers in an Australian study (Butt, 2016a) emphasised that well-established schoolwide induction practices were necessary in order to ensure teachers and TAs were fully versed on their rights and roles as an employee. The relationship between how TAs were deployed and perceived by teachers and the overall inclusive practices of a school was described in a study by Devecchi and Rouse (2010), highlighting the importance of schools developing a “culture and ethos that builds a collective sense of belonging and participation” (p. 92). The research revealed that effective collaboration was dependent on whole-school (meso) systems of support including induction, training, participation, and deployment of TAs. Furthermore, they found that the successful inclusion of students was dependent on how well schools support the inclusion of TAs in the school community. Clear inclusive policies should therefore outline schools’ philosophies regarding how TAs are inducted into a school and the role they play in promoting inclusive practices. These studies identify that schools should consider whether their current structures demonstrate that TAs are included as core members of the school community.

Interpersonal Relationships

The final theme that featured in the literature relates to interpersonal relationships. The review emphasises the benefits of teachers having well developed interpersonal skills when working with TAs. This theme is expanded upon below.

Including TAs in the 'Communication Loop' leads to Improved Support for Students

The review highlighted the importance of effective communication when teachers work with TAs. In an Australian study, teachers emphasised the need to keep TAs in the 'communication loop' through an orientation process focusing on essential school information, procedures, and policies, however, they indicated this was an area that needed more work. Teachers in the study recognised that attendance at meetings would help TAs to keep abreast of what was going on in the school but noted that TAs' work hours precluded them from attending meetings out of hours (Butt, 2016a). Similarly, in another study, line managers of TAs noted that collaboration and effective communication between teachers and TAs were necessary in supporting inclusive practice, along with making time for meetings and discussions (Groom & Rose, 2005). Other studies also emphasised the importance of positive collaborative working relationships between teachers and TAs, for example, teachers perceived effective team relationships could be maintained through improved communication such as enabling TAs access to whole staff briefings and meetings, policies, internal mailboxes, and emails (Douglas et al., 2015; Wilson & Bedford, 2008). In a study by Wallace et al. (2001), teachers identified that effective communication with TAs was a key competency of teachers when supervising TAs, noting communication extended to sharing student-related information with TAs and explaining their role in providing support to students. Each of these findings emphasises the work of teachers with TAs can be enhanced through improved communication.

TAs are likely to feel more Valued and Appreciated when their Relationships with Teachers are Collaborative

Findings from the review demonstrate that when teachers and TAs nurture positive collaborative relationships, the benefits extend beyond their partnership to create a more inclusive learning environment for staff and students alike. A study examining collaborative relationships between teachers and TAs found effective professional relationships were critical to ensuring students received high quality educational experiences (Biggs et al., 2016). When teachers in the study demonstrated TAs were valued, welcomed, and needed, TAs felt a greater sense of inclusion. Seeking the opinions of TAs and encouraging their participation in meetings further facilitated positive, collaborative working relationships. The findings also emphasised the importance of schools facilitating and supporting collaboration between teachers and TAs. A further example of the benefits of collaborative relationships between teachers and TAs was described in a study by Giangreco et al. (2001) who noted that teachers emphasised the importance of frequently thanking TAs for their work, particularly as they perceived TA support helped to ease their heavy workloads. Teachers in the study explained that the contributions of TAs were acknowledged through symbolic gestures at the school such as appreciation lunches, gifts, awards, or public recognition. It was also suggested that a sign on the door showing their name added to a sense of belonging for TAs and helped to create more collaborative working relationships. Devecchi and Rouse (2010) described the gratitude teachers felt when TAs supported them by sharing knowledge about students or keeping them up to date with other developments in the school. This was particularly beneficial for secondary teachers who did not have daily contact with students. Each of these studies indicates teachers should prioritise developing collaborative working practices with TAs to build and maintain mutually beneficial effective working relationships.

Discussion

This literature review aimed to investigate how teachers perceive their work with TAs. The findings can be adopted by mainstream teachers and ILs to improve inclusive

school practices in collaboration with TAs. To date, the majority of research has focused on the training needs of TAs and how teachers can capitalise on TA training and less so on the potential that teachers and ILs have to make the most of this additional and valuable resource through examining their perceptions. Furthermore, ILs have the ability to enhance inclusive practice by supporting classroom teachers to reconsider the way they work with TAs. ILs also have the capacity to extend their influence to school leadership teams and shape whole-school practice.

The findings from this review build on the existing research base. The synthesis of international research examines teachers' perceptions of their work with TAs through a focus on the four identified areas of roles and responsibilities, planning and pedagogy, leadership, and interpersonal relationships. For schools to facilitate improved collaboration between teachers and TAs, considerable time needs to be invested in reviewing current practices, reconsidering current models of support in schools, and determining a strategic vision for the future. This includes upskilling of in-service teachers and the provision of training to pre-service teachers in how to best work with TAs.

There are implications for universities, those leading inclusion in schools, and teachers working in daily contact with TAs.

1. Teachers need to be aware of the roles and responsibilities of TAs so they can make informed decisions regarding how to make the best use of their support. In-service teachers require training and guidance on how to work in the most effective manner with TAs. Universities should consider training programs of pre-service teachers to determine whether they are preparing new teachers to make effective decisions regarding TA deployment.
2. Teachers need to plan for the effective use of TAs and share the planned approach with TAs prior to lessons. Sufficient time is necessary to allow for collaboration between teachers and TAs to ensure the intended outcomes are realised with TAs' support.
3. A whole-school inclusive culture leads to more inclusive and collaborative working relationships between teachers and TAs. Teachers need to view themselves as leaders of TAs. They should be involved in recruitment, supervision, and training of TAs yet they need time and supervisory training themselves to learn and hone this skill.
4. Teachers need to prioritise the formation and maintenance of collaborative working relationships with TAs they are in contact with. Teachers play a significant role in making TAs feel included in the workplace which can be achieved through open communication.

Limitations

The search and selection methodology was systematic by nature and relied on key search terms, however, there is the possibility that peer-reviewed studies that met the criteria for inclusion were not identified through the process. Inherent with international studies is the variation in cultural and educational contexts, (e.g., local understandings of what constitutes inclusive practice, funding mechanisms that determine models of support in schools, variations in the structure of education systems, cultural norms associated with educating students with a disability in mainstream settings, and individuals' perceptions regarding what is considered effective practice when supporting students). Bearing this in mind, caution is needed when interpreting, comparing, and contrasting international practices.

Recommendations for Future Research

International research in this field is often limited to moderate sample sizes, and is frequently qualitative, focused on the self-reported perceptions of teachers and TAs. A large body of observational research from the United Kingdom gives greater insight into how TAs are deployed in classrooms, however, this was the first large-scale study of its kind. International studies with larger sample sizes are needed. Alternative data sources could be included in new research such as observations, timelogs, audio recordings, survey data, and case studies. The impact of TA support on students' academic attainment, wellbeing, and behaviour is also an area requiring further research and was beyond the scope of this literature review.

TAs', parents', and students' perspectives were not identified in this review and would be a valuable addition to the synthesis of research. TAs' perspectives on how teachers could improve their practice would provide an interesting comparison to the literature summarised in this review. The views of parents would also be an area to investigate, particularly to determine whether parents prefer TA support over other adjustments and to examine what parents perceive are the possible implications of having TAs work with their children. Student voice is also underrepresented in the current research base; it may be possible to gather data on varying perspectives of students with varied support needs to see whether certain groups of students have a preference for TA support over others, and to explore the types of support both students and parents feel are appropriate at various stages of schooling and for a variety of learning needs.

Further research into alternative uses of TAs is also much needed as schools consider moving away from the traditional allocation of TAs to students with a disability. Funding models in some school systems allocate TA time to students with a disability rather than funding alternative supports and adjustments. Research investigating the justification of this model is also warranted given its potential associated risks.

Teacher pre-service and in-service programs should be examined to determine whether they provide opportunities to better prepare teachers to work with other support staff. Research could therefore investigate the training needs of teachers in relation to making decisions about using TA support effectively. The resultant programs may be assessed to determine their efficacy and impact on reforming teacher practices towards more inclusive models of support, particularly in relation to the inclusion of students with a disability.

Conclusion

Teachers play a significant role in the decision-making process regarding the deployment of TAs, and when better informed regarding the possible implications of their practices, they are more likely to make decisions that align with recommendations that have arisen from international research. There is no single identified model of effective teacher practice when working with TAs, although the collaborative relationship between teachers and TAs should operate within a wider framework of whole-school inclusive educational practice. The results of this literature review suggest that, despite the contexts differing in each of the studies, the issues are very much the same. Teachers will make better decisions regarding the manner in which they work with TAs when considering the following: roles and responsibilities of both teachers and TAs need to be clearly defined and understood by both teachers and TAs; lesson planning and pedagogical practice needs to factor in how to make the best use of TAs; school leadership teams need to consider their whole-school approach to inclusive practice and how this incorporates the role of the TA and the leadership

role teachers should assume when working with TAs, and; teachers need to consider how they can develop and sustain positive, collaborative working relationships with TAs so that the advantages of having them in their lessons are realised. Education sectors should reflect on their current practices to determine whether teachers are well informed about practices that assist in obtaining maximum benefit from their working relationships with TAs.

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